CS208 Practice Problem Set 5

These problems in first-order logic are from "Logic in Computer Science: Modeling and Reasoning about Systems" by Huth and Ryan.

1. **Exercise 2.2:** Questions 4, 5, 6.

2. **Exercise 2.3:** Questions 2, 3. For questions 9, 12, 13 of this exercise, no need to give natural deduction proofs (we haven't covered this for FOL), but convince yourself through semantic arguments that the formula(s) on the LHS of $\vdash$ semantically implies the formula on the RHS of $\vdash$.

3. **Exercise 2.4:** Questions 1, 2, 5, 6, 9, 11, 12